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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,016	02/06/2002	Kent D. Henry	42074-00270	1908

7590 06/30/2005

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EXAMINER	
SIEFKE, SAMUEL P	
ART UNIT	**PAPER NUMBER**
1743	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/072,016	HENRY ET AL.	
	Examiner	Art Unit	
	Samuel P. Siefke	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-61 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-61 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 6/6/02,9/15/03.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I in the reply filed on 5/19/05 is acknowledged.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-61 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-43 of copending Application No. 10/072,020. Although the conflicting claims are not identical, they are not patentably distinct from each other because the 10/072,020 application comprises a sensor head body configured with a plurality of sensor ports to receive

interchangeable sensor heads, an electronic housing portion connectable to the sensor head. The instant application claims substantially the same limitations as 10/072,020, therefore the instant claims are fully encompassed by the provisional claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1-2, 4-7, 9-14, 29, 30-40, 45-47** and **60-61** are rejected under 35 U.S.C. 102(b) as being anticipated by Dickey et al. (USPN 5,821,405).

Dickey discloses a modular water quality measurement apparatus that comprises a sealed housing with a universal sensor interface cap (12) and mechanical and electrical sensor connections (14) for receiving removably attachable sensors (16 or 16'). Each of the mechanical and electrical sensor connections (14) are individually electrically connected to a programmable motherboard (20) within the housing. Sensor daughterboards (22) are removably attached to the motherboard (20) corresponding to individual sensors (16 or 16') connected to the universal sensor interface cap (12). The

removably attachable input/output daughterboards (24) are electrically connected to the motherboard (20) for accommodating various serial interface types and software is provided for collecting information from the sensors (16 or 16') and transmitting the information through the input/output daughterboards (24) for manipulation by a user (abstract). A modularized sensor 10 includes a sealed housing (not shown) to which is attached a universal sensor interface cap 12. Each of the mechanical sensor connections 14 are individually connected by sensor connections 18 to a programmable motherboard 20 conformed to be located within the sealed housing (not shown, fig. 1). The cap 12 provides mechanical support for the sensors 16 and 16', by mating to threaded collars (not shown) on sensors 16 and 16'. Regarding claim 4 requiring an atmospheric pathway incorporated in the connection path, it is inherent that when a sensor is pushed inwardly into the sensor connections substantially all the air will be removed by the sensor connector (36) when inserted. Universal sensor interface cap 12 also physically supports the motherboard 20 by any means known in the art such as an angle bracket-type configuration (not shown). Cap 12 contains connectors (not shown) for attachment to the sensors 16 and 16'. The microprocessor on the motherboard 20 is digitally interfaced to each sensor daughterboard 22 via a serial shift register. Sensor daughterboards 22 connect to the motherboard 20 in order to complete the sensor connection and to get control information from the microprocessor. Sensor daughterboards 22 are developed in order to be compatible with sensors for determining conductivity, dissolved oxygen, pH, redox, ammonium, nitrate, turbidity, and isolated analog voltage inputs, as well as any other desired input developed now or

hereafter. The sensors, 16 and 16', are comprised of a sensor sensing element 28 attached to a sealed connector 36 with a threaded collar (not shown). The sealed connectors 36 are conformed so as to provide the common mechanical and electrical interface disclosed in the invention. That is, all sensors 16 and 16' are uniform and share a common connector and the same threaded collar, for example, but the sensing elements 28 can be as varied as the types of measurements to be made (col. 5, lines 48-64). The product software saves the sensor driver into an unused location within the non-volatile memory on the motherboard 20 and updates the configuration table (col. 6, lines 30-33). A primary requirement for the sensor driver is that it be "learnable." That is, the product software need not know any unique capability of the sensors 16 or 16', but must be able to gather all information necessary to gather data from the sensors 16 or 16', display data to the user, execute sensor setup, and execute sensor calibration (col. 6, lines 34-39). Product downloads are performed on a personal computer (col. 6, lines 25-33).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims **3,17-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickey et al. (USPN 5,821,405) in view of Palfenier et al. (USPN 6,359,430).

Dickey discloses a modular water quality measurement apparatus as disclosed above.

Dickey does not specifically teach a second portion configured being configured to begin a distance below the external surface and includes a second diameter larger

than the first diameter (of the housing), the plurality of ports being further configured such that upon insertion of the insertable portion through the first portion to the second portion, the radially compressive sealing device is configured to expand into the second portion creating a compression force which resists withdrawal of the sensor component from the port.

Palfenier teaches an o-ring 138 with an outer diameter with a wider diameter than the line (not shown) defining the inner bore of the housing 106. The inner bore is inherently shows an indentation to accommodate a wider o-ring. This basic feature is well known and used routinely in the art to secure insertable parts so that they just do not fall out of a socket, the o-ring provides a seal to securely fasten the insertable part. It would have been obvious to one having an ordinary skill in the art to modify Dickey to locate the o-ring groove on either the outer or inner surface or the sensor or housing, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Regarding claim **18**, the housing comprises a plurality of layers which comprises an inner housing and an outer housing. It would have been obvious to provide an inner layer and an outer layer housing because the outer housing would provide an extra barrier to prevent water from getting into the electronics.

Regarding claim **19**, a cylindrical shape, it would have been obvious to provide a cylindrical housing in order for easy grasping by a user. While not shown in figure 1, it would be obvious that the housing would be cylindrical because the cap is cylindrical

and if one wanted to provide a housing, it would be easier to mate a cylindrical housing with a cylindrical cap.

Regarding claims **20-25**, the use of the compression seals (o-rings) are discussed above and motivation for combining the reference is provided above. Further it would have been obvious to proved an o-ring when a device is around water because provides superior sealing so that the inner parts are kept dry.

Regarding claims **26-28**, it would have been obvious to provide a removable backshell to allow for easy replacement of batteries and so that one could access the removable daughterboards to change for different analytical tests.

Claims **8, 15, 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickey et al. (USPN 5,821,405) in view of DataSonde 4a/Brochure entitled New Series 4a Water Quality Instruments from Hydrolab (Hydrolab).

Dickey discloses a modular water quality measurement apparatus as disclosed above.

Dickey does not specifically teach an accessory comprise a wiper device or a stirrer device, or a magnetically stirrer.

Hydrolab teaches a multi-parameter water quality sensor device that comprises a shuttered turbidity senor which is an electromechanical device or an accessory as defined in the instant application. It would have been obvious to one having an ordinary skill in the art to modify Dickey to employ the shuttered turbidity sensor of Hydrolab since it teaches that there is no need to wipe the optical surfaces.

Claims **41-44** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickey et al. (USPN 5,821,405) in view of Maus et al. (USPN 6,602,469).

Dickey discloses a modular water quality measurement apparatus as disclosed above.

Dickey does not specifically the use of the internet or a network system for information transferring.

Maus teaches a health monitoring device which uses the internet to connect to a network system for transferring information at a high rate of speed. It would have been obvious to one having an ordinary skill in the art to modify Dickey to employ internet capabilities so that water quality information can be provided in real-time fashion to remote facilities.

Conclusion

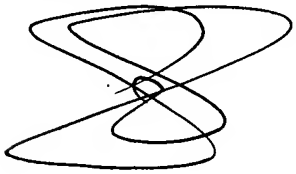
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel P. Siefke whose telephone number is 571-272-1262. The examiner can normally be reached on M-F 7:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1700. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jill Warden
Supervisory Patent Examiner
Technology Center 1700

Sam P. Siefke



June 23, 2005